

REMARKS

Claims 4 and 5 have been amended, and new claims 82-84 have been added. Accordingly, claims 1-5, 7, 9-46, 49-53, 65-69, 71-77, and 79-84 are pending in the present application. The claim amendments and new claims are supported by the specification and claims as originally filed, with no new matter being added. Accordingly, favorable reconsideration of the pending claims is respectfully requested.

1. Objection Under 35 U.S.C. § 132

The Office Action objected to the previous amendment filed on June 14, 2002 under 35 U.S.C. § 132 as introducing new matter. In particular, the Examiner indicated that the recitation of a “composite” hologram in claim 5 is not supported by the present specification. Accordingly, Applicants have deleted the term “composite” from claim 5, and request that the objection under 35 U.S.C. § 132 be withdrawn.

2. Rejections Under 35 U.S.C. § 112

Claim 5 was rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors, at the time the application was filed, had possession of the claimed invention. The reason given in the Office Action for this rejection is the same as the new matter objection discussed above for claim 5.

Since the term “composite” has been deleted from claim 5 as discussed above, Applicants request that the rejection of claim 5 under 35 U.S.C. § 112, first paragraph, be withdrawn.

Claim 4 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. The Examiner indicated that the recited refraction pattern, corner cube reflector, and moiré pattern are different from a diffraction pattern or holographic image pattern, and thus the recitation of all of these elements together makes claim 4 unclear.

Applicants have deleted the recited refraction pattern, corner cube reflector, and moiré pattern from claim 4. Thus, Applicants request that the rejection of claim 4 under 35 U.S.C. § 112, second paragraph, be withdrawn.

Applicants note that new claims 82-84 have been added to respectively recite the refraction pattern, corner cube reflector, and moiré pattern originally recited in claim 4.

3. Rejections Under 35 U.S.C. § 103

Claims 1-5, 14, and 79 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,700,550 to Uyama et al. (hereinafter “*Uyama*”) for the reasons set forth in the previous Office Action dated February 20, 2002. Applicants respectfully traverse.

Claim 1 recites a security article comprising a light transmissive substrate having a first surface and an opposing second surface, with the first surface having an optical structure thereon. A color shifting optical coating is on the second surface of the substrate, with the optical coating providing an observable color shift as the angle of incident light or viewing angle changes.

Independent claim 79 recites similar limitations.

Uyama discloses a transparent hologram seal structure that has an alternating high and low index optical stack (transparent evaporated layer 10) on a hologram forming layer 4. The hologram forming layer 4 is on a transparent polymer base member 2.

As the Examiner admits, *Uyama* does not teach that transparent evaporated layer 10 is formed at an opposite surface of base member 2 from where the hologram is formed. The Examiner asserts, however, that it would be an obvious matter of design choice to have such an arrangement of the layers. The Examiner argues that the optical function of the hologram will not change at all whether the hologram is placed on a first surface or second surface of a substrate, and that the substrate will not effect the optical function of the hologram. Applicants respectfully disagree.

Uyama particularly discloses at col. 6, ll. 21-24 that:

Since the hologram forming layer 4 is an organic polymer having a low-refractive index layer, it is desired that the layer below the hologram forming layer 4 is high-refractive index layer 6.

*Desired
Not
being
necessary* Such a structure of the hologram forming layer 4 being contiguous with high-refractive index layer 6 of layer 10 is necessary, since *Uyama* discloses a transmissive structure. If the device of *Uyama* were modified as suggested by the Examiner so that the hologram forming layer 4 (low index) was placed on an opposite side of base member 2 (low index) from layer 10, the hologram would essentially disappear due to index matching of the base layer 2 with hologram forming layer 4. Such a modification of the structure of *Uyama* would destroy its intended function in providing a visible hologram. As recognized by *Uyama*, only by putting the *No* hologram forming layer 4 next to the high index layer 6 of layer 10 would the hologram be suitably visible. Thus, there would have been no motivation for modifying the structure of *Uyama* to place the hologram on the opposing side of a substrate (base member 2) from where a color shifting optical coating (layer 10) is located. *Uyama* essentially teaches away from such a modification by stating that “the layer below the hologram forming layer 4 is high-refractive index layer 6” of transparent evaporated layer 10.

Accordingly, for the above reasons, claims 1 and 79 would not have been obvious over *Uyama*. Claims 2-5 and 14 depend from claim 1, and thus include the limitations thereof. Hence, claims 2-5 and 14 would not have been obvious over *Uyama* for at least the same reasons as discussed above for claim 1. Applicants therefore respectfully request that the rejection of claims 1-5, 14, and 79 under 35 U.S.C. § 103(a) be withdrawn.

Claim 7 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Uyama* in view of U.S. Patent No. 4,930,866 to Berning et al. (hereinafter “*Berning*”) for the reasons set forth in the previous Office Action dated February 20, 2002. Applicants respectfully traverse.

Berning discloses a combination of a reflector (Al)/dielectric (MgF_2)/absorber (Cr) optical stack 14 in combination with a colored superstrate 13. The Examiner asserts that it would have been obvious to apply the teachings of *Berning* to modify the transparent evaporated layer 10 of *Uyama* to provide a color shifting layer according to *Berning*.

Claim 7 recites that the color shifting optical coating is a multilayer optical interference film including an absorber layer on the second surface of the substrate, and a dielectric layer on the absorber layer. Since claim 7 depends from claim 1, claim 7 is distinguishable over *Uyama* for the same reasons as discussed above for claim 1. In addition, *Berning* does not provide any teaching that overcomes the deficiencies of *Uyama*. Thus, even if the teachings of *Berning* were applied to modify the transparent evaporated layer 10 of *Uyama*, there still would have been no motivation for modifying the structure of *Uyama* to place the hologram on the opposing side of a substrate from where the color shifting optical coating is located.

Accordingly, claim 7 would not have been obvious over *Uyama* in view of *Berning*. Applicants therefore respectfully request that the rejection of claim 7 under 35 U.S.C. § 103(a) be withdrawn.

Claim 80 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Uyama* in view of *Berning* for the reasons set forth in the previous Office Action dated February 20, 2002. Applicants respectfully traverse.

Independent claim 80 recites a light transmissive substrate having a first surface and an opposing second surface, with the first surface having an optical interference pattern, and a color shifting optical coating on the second surface of the substrate. The optical coating includes an absorber layer on the second surface of the substrate, a dielectric layer on the absorber layer, and a reflector layer on the dielectric layer.

The Examiner asserts that it would have been obvious to apply the teachings of *Berning* to modify the transparent evaporated layer 10 of *Uyama* to provide a color shifting layer according to *Berning*. Applicants respectfully disagree.

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Since *Uyama* discloses a transmissive structure, there would have been no motivation to substitute the color shifting optical stack of *Berning*, which is non-transmissive/reflective, for the transparent evaporated layer 10 of *Uyama*. Such a modification of the layers of the transparent hologram seal of *Uyama* would destroy the intended function thereof in providing a transmissive structure.

In addition, even if the teachings of *Berning* were applied to modify the transparent evaporated layer 10 of *Uyama*, there still would have been no motivation for modifying the structure of *Uyama* to place the hologram on the opposing side of a substrate from where the color shifting optical coating is located, for the reasons discussed with respect to claim 1.

Accordingly, claim 80 would not have been obvious over *Uyama* in view of *Berning*. Applicants therefore respectfully request that the rejection of claim 80 under 35 U.S.C. § 103(a) be withdrawn.

Claims 66-68, 76, 77, and 81 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Berning* in view of *Uyama* for the reasons set forth in the previous Office Action dated February 20, 2002. Applicants respectfully traverse.

Independent claim 66 is directed to a hot stamp structure for use in attaching a security article to an object, and recites a light transmissive substrate on a release layer, the substrate having an optical interference pattern thereon, and a color shifting optical coating on the substrate. Independent claim 81 is similar to claim 66, and further recites that the optical coating includes an absorber layer, a dielectric layer adjacent to the absorber layer, and a reflector layer adjacent to the dielectric layer.

The Examiner asserts that it would have been obvious to apply the teachings of *Uyama* to modify the thin film optically variable article of *Berning* to include a hologram within the substrate (superstrate 13). Applicants respectfully disagree.

As discussed above, *Uyama* discloses a transmissive structure, whereas *Berning* discloses a thin film article that is a non-transmissive/reflective article. There is no teaching or suggestion in the cited references that the hologram of *Uyama*, which is used in conjunction with transparent evaporated layer 10, could be used in conjunction with the non-transmissive/reflective color shifting optical stack 14 of *Berning*. Such a combination is only disclosed by the present application. Hence, combining the teachings of *Berning* with *Uyama* to arrive at the claimed invention is an improper hindsight reconstruction.

Accordingly, for the above reasons, claims 66 and 81 would not have been obvious over *Berning* in view of *Uyama*. Claims 67, 68, 76, and 77 depend from claim 66, and thus include the limitations thereof. Hence, claims 67, 68, 76, and 77 would not have been obvious over *Berning* in view of *Uyama* for at least the same reasons as discussed above for claim 66.

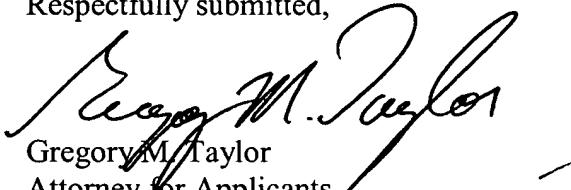
Applicants therefore respectfully request that the rejection of claims 66-68, 76, 77, and 81 under 35 U.S.C. § 103(a) be withdrawn.

CONCLUSION

In view of the foregoing, Applicants respectfully request favorable reconsideration and allowance of the present claims. In the event there remains any impediment to allowance of the application, which could be clarified in a telephone interview, the Examiner is respectfully requested to contact the undersigned attorney.

Dated this 6th day of December 2002.

Respectfully submitted,



Gregory M. Taylor
Attorney for Applicants
Registration No. 34,263

WORKMAN, NYDEGGER & SEELEY
1000 Eagle Gate Tower
60 East South Temple
Salt Lake City, Utah 84111
Telephone: (801) 533-9800
Fax: (801) 328-1707

VERSION WITH MARKINGS TO SHOW THE CHANGES MADE

IN THE CLAIMS:

Claims 4 and 5 have been amended as follows:

4. (Twice Amended) The security article of claim 1, wherein the optical structure is selected from the group consisting of a diffraction grating pattern, [refraction pattern,] holographic image pattern, [corner cube reflector,] zero order diffraction pattern, [moiré pattern,] and combinations thereof.

5. (Thrice Amended) The security article of claim 1, wherein the optical structure is selected from the group consisting of [composite] holograms with changing imagery as the angle of view is changed, and a hologram with multiple holographic pixels arranged in a spatial orientation that generates one holographic image.